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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,276	06/21/2005	Anna Ingrid Kristina Berggren	100939-1P US	8864

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EXAMINER	
YOUNG, SHAWQUIA	
ART UNIT	PAPER NUMBER
1626	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,276	BERGGREN ET AL.	
	Examiner	Art Unit	
	Shawquia Young	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,14,16 and 18-26* is/are pending in the application.

4a) Of the above claim(s) *16,18,24 and 25* is/are withdrawn from consideration.

5)☒ Claim(s) *20* is/are allowed.

6)☒ Claim(s) *1-11,14,22,23 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-12, 14, 16 and 18-26 are currently pending in the instant application. As stated in the previous Office Action, claims 16 and 18 are withdrawn from consideration as being non-elected subject matter. Applicants added new claims 22-26 and amended claims 1, 6, 16 and 20 in Applicant Arguments/Remarks filed on December 22, 2006. Claims 24 and 25 are withdrawn from consideration as being non-elected subject matter.

I. Response to Amendment and Remarks

Applicants amendments to the claims and remarks filed on December 22, 2006 have been entered in the application and considered.

Applicants' amendments and arguments have not overcome the following rejections:

The 35 USC 102(e) rejection of claims 1-11,14, 19 and 21 as being anticipated by the *Smith, et al.* (US20040267028).

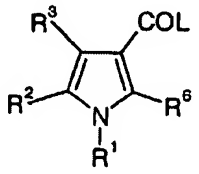
II. Rejection(s)

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 26 is rejected under 35 U.S.C. 102(e) as being anticipated by *Martins, et al.* (US2003/0013754). The primary reference of *Martins, et al.* claims benefit to a Provisional application 60/171,954, filed on December 23, 1999. The instant invention claims a product with the formula  in claim 26.

The *Martins, et al.* reference teaches pyrrole compounds that are potent and selective inhibitors of PDE4 such as 5-Methyl-1,2-diphenyl-1H-pyrrole-3-carboxylic acid (See example 44, page 19, paragraph [0188]). This species of compound anticipates the genus compound of the instant invention that is fully defined in claim 26.

Claim Rejections - 35 USC § 112, 1st paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

(1) Claims 1-11, 14, 22 and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The term "prodrug" in the above claims are not defined in the specification so as to know the structures of the

compounds that are included and/or excluded by the term. Therefore, the specification lacks adequate support for Claims 1-11, 14, 22 and 23.

(2) Claims 1-11, 14, 22 and 23 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for preparing several amino acid derivatives by using the specified organic amines (*See* pages 5-13 of the specification), does not reasonably provide enablement for a prodrug of a compound of formula (I) or (II). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

As stated in the MPEP 2164.01 (a), "There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue."

In *In re Wands*, 8 USPQ2d 1400 (1988), factors to be considered in determining whether a disclosure meets the enablement requirement of 35 U.S.C. 112, first paragraph, have need described. They are:

1. the nature of the invention,
2. the state of the prior art,
3. the predictability or lack thereof in the art,
4. the amount of direction or guidance present,
5. the presence or absence of working examples,
6. the breadth of the claims,
7. the quantity of experimentation needed, and
8. the level of the skill in the art.

In the instant case

The nature of the invention

The nature of the invention is a compound of formula (I) or (II) or a pharmaceutically acceptable salt, prodrug or solvate thereof.

The state of the prior art

It is the state of the prior art that the term "prodrug" found in the claims is defined as a pharmacological substance (drug) which is administered in an inactive (or significantly less active) form. Once administered, the prodrug is metabolized in vivo into the active compound (<http://en.wikipedia.org/wiki/Prodrug>).

The amount of direction or guidance present and the presence or absence of working examples

There is no direction or guidance present in the specification or working examples present in the specification are that defines or relates to what prodrugs are being included in the elected invention. The term "prodrug" is not defined in the instant specification.

The breadth of the claims

The breadth of the claims a compound of formula (I) or (II) or a pharmaceutically acceptable salt, prodrug or solvate thereof.

The quantity of experimentation needed and the level of the skill in the art

While the level of the skill in the pharmaceutical art is high, the quantity of experimentation needed is undue experimentation. One of skill in the art would need to

prepare compounds with both similar and different structural radicals without any direction as to what structural radical is needed and how different the prodrug can be from a compound of formula (I) or (II).

The level of skill in the art is high without showing or guidance as to how to make prodrugs of a compound of formula (I) or (II) it would require undue experimentation to figure out the starting materials, solvents, temperatures and reaction times that would provide prodrugs of the above compounds.

(3) Claim 12 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for stereoisomers of a compound in claim 12, does not reasonably provide enablement for constitutional isomers of a compound in claim 12. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

As stated in the MPEP 2164.01 (a), "There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue."

In *In re Wands*, 8 USPQ2d 1400 (1988), factors to be considered in determining whether a disclosure meets the enablement requirement of 35 U.S.C. 112, first paragraph, have need described. They are:

1. the nature of the invention,
2. the state of the prior art,
3. the predictability or lack thereof in the art,
4. the amount of direction or guidance present,
5. the presence or absence of working examples,
6. the breadth of the claims,
7. the quantity of experimentation needed, and
8. the level of the skill in the art.

In the instant case

The nature of the invention

The nature of the invention is a compound selected from a group defined in claim 12 and where applicable, optical isomers, tautomers, stereoisomers and racemates thereof as well as pharmaceutically acceptable salts and solvates thereof.

The state of the prior art

It is the state of the prior art that the term "isomer" found in the claims is defined as compounds that have the same molecular formula, but different structures. There are two types of isomers, constitutional isomers and stereoisomers. Constitutional isomers differ in the way the atoms are connected whereas in stereoisomers the atoms are connected in the same way, but differ in the way the atoms are arranged in space. (http://chemed.chem.purdue.edu/genchme/topicreview/bp/1organic/isomers.html>).

The amount of direction or guidance present and the presence or absence of working examples

The only direction or guidance present in the specification is the brief description of how isomers may be separated on page 5 in the specification. There are no working

examples of possible isomers present in the specification.

The breadth of the claims

The breadth of the claims is a compound selected from a group defined in claim 12 and where applicable, optical isomers, tautomers, stereoisomers and racemates thereof as well as pharmaceutically acceptable salts and solvates thereof.

The quantity of experimentation needed and the level of the skill in the art

While the level of the skill in the pharmaceutical art is high, the quantity of experimentation needed is undue experimentation. One of skill in the art would need to prepare compounds with both similar and different structural radicals without any direction as to what structural radical is needed and how different the isomer can be from a compound listed in claim 12.

The level of skill in the art is high without showing or guidance as to how to make other isomers, it would require undue experimentation to figure out the starting materials, solvents, temperatures and reaction times that would provide other isomers.

Claim Rejections - 35 USC § 112, 2nd paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

(1) Claims 1-11, 14, 22 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1, 6, 22 and 23, applicant is

claiming a compound of formula (I) or (II) or a pharmaceutically acceptable salt, prodrug or solvate thereof. Furthermore, the term "prodrug" in claims 1-11, 14, 22 and 23 renders the claims indefinite as the term "prodrug" is a pharmacological substance (drug) which is administered in an inactive (or significantly less active) form. Therefore, the term "prodrug" found in the claims renders the claims indefinite because the term is not defined as to know the metes and bounds of the claims.

(2) Claims 6, 10 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite and unclear. In Claims 6 and 22, the groups C_{1-6}alkyl group, C_{1-6}alkoxy, trifluoromethyl, and C_{1-6}alkylamino in the variables R^7, R^8, R^9 and/or R^{10} are not included in Claim 1 in which Claim 6 is dependent. For example, in claim 1 the alkyl group mentioned only includes C_{1-3} not C_{1-6} as defined in claim 6. In claim 10, the group 1-piperidinylamino has been deleted from claim 6 in variable R^9 and claim10 depends on claim 6. There is insufficient antecedent basis for these limitations in the claims.

III. Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawquia Young whose telephone number is 571-272-9043. The examiner can normally be reached on 5:30 AM-2:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on 571-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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